

ANSWERS

Naming Alkanes – Worksheet #1

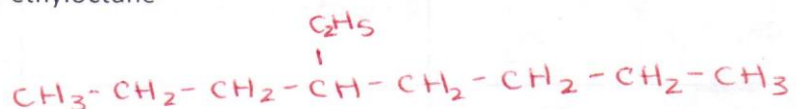
Name the following branched alkanes:

1.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	2-methylpropane
2.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array}$	2-methylbutane
3.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array}$	4-ethylheptane
4.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_3 \end{array}$	3-ethyl-4-methylheptane
5.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array}$	5-ethyl-3-methyloctane
6.	$\begin{array}{c} \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2 \\ \\ \text{H}_3\text{C}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	5-ethyl-5-methyldecane
7.	$\begin{array}{c} \text{CH}_2-\text{CH}_2-\text{CH}_3 \\ \\ \text{H}_2\text{C}-\text{CH}-\text{CH}_2-\text{CH}-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \text{CH}_2-\text{CH}_2-\text{CH}_3 \end{array}$	6-ethyl-4-methylnonane

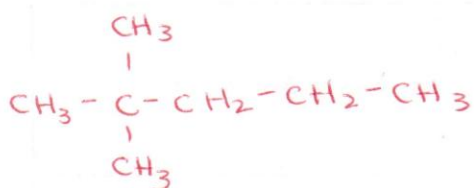
Draw structural formulas for the following molecules. Remember the following:

- Carbons on the end of a chain are attached to three hydrogens
- Carbons in the middle of a chain are attached to two hydrogens
- Carbons that have one branch attached are also attached to one hydrogen
- Carbons that have two branches attached are not attached to any hydrogens.

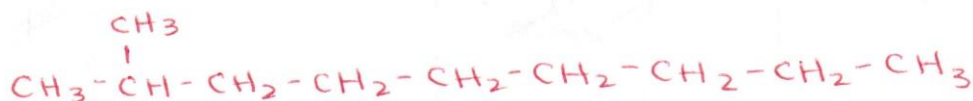
8. 4-ethyloctane



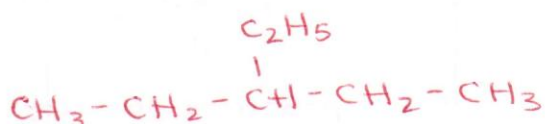
9. 2-methylnonane



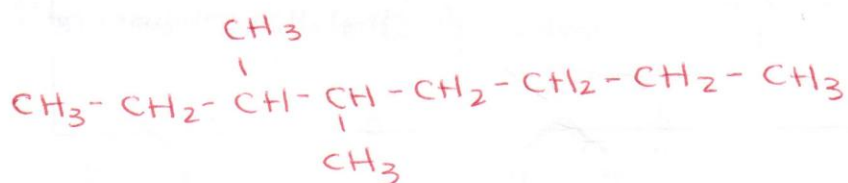
10. 2, 2-dimethylpentane



11. 3-ethylpentane



12. 3, 4-dimethyloctane



Naming Alkanes – Worksheet #2

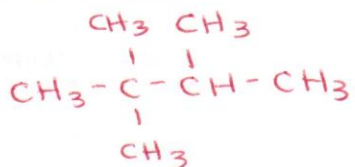
Name the following branched alkanes:

1.	$ \begin{array}{ccccccc} & & & & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & & & \\ & & & & \text{CH}_3 & & & & \end{array} $	3-methyl-5-propyloctane
2.	$ \begin{array}{ccccccc} & & \text{CH}_3 & & & & \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{CH} & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & & & & & \\ & & & & \text{CH}_3 & & & & \text{CH}_3 & & \end{array} $	3,3,5-trimethylheptane
3.	$ \begin{array}{cccc} & & \text{CH}_3 & \\ & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_3 \\ & & & & & & \\ & & & & \text{CH}_3 & & \end{array} $	2,2-dimethylbutane
4.	$ \begin{array}{ccc} & \text{CH}_3 & \\ & & \\ \text{CH}_3 & - & \text{C} & - & \text{CH}_3 \\ & & \\ & \text{CH}_3 & \end{array} $	2,2-dimethylpropane
5.	$ \begin{array}{ccccccc} & & & & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & \\ \text{H}_3\text{C} & - & \text{CH}_2 & - & \text{C} & - & \text{CH}_2 & - & \text{CH}_3 \\ & & & & & & \\ & & & & \text{CH}_2 & - & \text{CH}_3 \end{array} $	3,3-diethylpentane

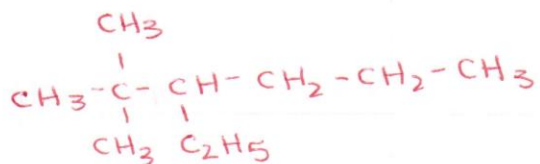
6.	$ \begin{array}{c} \text{CH}_3 \\ \\ \text{H}_3\text{C}-\text{CH}_2-\text{C}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_2-\text{CH}_3 \end{array} $	3-ethyl-3-methylpentane
7.	$ \begin{array}{ccccccc} & & \text{CH}_3 & & \text{CH}_3 & & \\ & & & & & & \\ \text{H}_3\text{C}-\text{CH}-\text{CH}-\text{CH}-\text{CH}-\text{CH}-\text{CH}_2-\text{CH}_3 \\ \quad \quad \quad \quad \\ \text{CH}_3 \quad \text{CH}_3 \quad \text{CH}_3 \end{array} $	2,3,4,5,6-pentamethyloctane

Draw structural formulas for the following molecules.

8. 2,2,3-trimethylbutane



9. 3-ethyl-2,2-dimethylhexane



10. 2,3,4,5,6,7-hexamethyloctane

